WEST Search History

DATE: Thursday, July 06, 2006

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☐	L5	L4 not l1	31
☐	L4	L3 and (synthesis gas or syngas)	32
☐	L3	L2 and (hydrocarbon near2 synthesis or produc$4 near2 hydrocarbon or Fischer tropsch)	92
☐	L2	catalyst with reynolds	240
☐	L1	catalyst particle$1 with reynolds	10

END OF SEARCH HISTORY

=> s catalyst particle? (s) reynolds
        726863 CATALYST
        729784 CATALYSTS
        932763 CATALYST
                (CATALYST OR CATALYSTS)
       1176456 PARTICLE?
          6246 CATALYST PARTICLE?
                (CATALYST(W)PARTICLE?)
         31688 REYNOLDS
L1   11 CATALYST PARTICLE? (S) REYNOLDS

=> d l1 ibib ab 1-11

L1   ANSWER 1 OF 11 CAPLUS   COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:1028103   CAPLUS
DOCUMENT NUMBER: 143:269384
TITLE: Optimized catalyst particle distribution for slurry
                         bubble column reactors used in Fischer-Tropsch process
INVENTOR(S):   Espinoza, Rafael L.; Odueyungbo, Oluwaseyi A.; Zhang,
                         Jianping; Mohedas, Sergio R.
PATENT ASSIGNEE(S):   Conocophillips Company, USA
SOURCE: U.S. Pat. Appl. Publ., 17 pp.
                         CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

        PATENT NO.   KIND   DATE   APPLICATION NO.   DATE
        --------------   ----   --------   ---------------------   --------
        US 2005209350   A1   20050922   US 2004-803319   20040318
        WO 2005092824   A1   20051006   WO 2005-US5863   20050223
            W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
                CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
                GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
                LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
                NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM,
                SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
            RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,

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AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,
RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
MR, NE, SN, TD, TG
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PRIORITY APPLN. INFO.:　　　　　　　US 2004-803319　　A　20040318

AB　A method for selecting maximum and min. catalyst particle sizes for use in a
　　multiphase reactor that reflects optimum operating conditions of the
　　reactor is based on a maximum Archimedes number for estimating the maximum
particle size
　　and a property of a separation system linked to the reactor to determine the
min.
　　particle size.　The maximum Archimedes number could be selected based on a
maximum
　　　catalyst nonuniformity in the reactor.　Addnl., a method for producing
　　　hydrocarbons from syngas by Fischer-Tropsch reaction in a slurry bubble
　　　column reactor includes the use of fresh catalyst
　　　particles with an optimum size distribution based on a range of
　　　Archimedes nos. between .apprx.0.02 and 250 or alternatively based on an
　　　average Reynolds number .ltorsim.0.1.

L1　ANSWER 2 OF 11　CAPLUS　COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:　　　　　1981:3420　CAPLUS
DOCUMENT NUMBER:　　　　　94:3420
TITLE:　　　　　　　　　　Kinetics of dehydration of ethylene glycol in the gas
　　　　　　　　　　　　　phase
AUTHOR(S):　　　　　　　　Lopez, Jose Costa; March, Salvador Cervera; Garcia,
　　　　　　　　　　　　　Fidel Cunill
CORPORATE SOURCE:　　　　　Fac. Quim., Univ. Barcelona, Barcelona, Spain
SOURCE:　　　　　　　　　　Afinidad (1980), 37(368), 301-5
　　　　　　　　　　　　　CODEN: AFINAE; ISSN: 0001-9704
DOCUMENT TYPE:　　　　　　Journal
LANGUAGE:　　　　　　　　　Spanish

AB　The dehydration of diethylene glycol (I) in the gas phase over an
　　aluminosilicate catalyst at 310-90° [to give mainly 1,4-dioxane
　　(II), H2O, MeCHO, HOCH2CH2OH (III), and HOCH2CH2 OCH2CH2OCH2CH2OH (IV) as
　　well as smaller amts. of oxirane, MeOH, EtOH, and 2-methyl-1,3-dioxolane]
　　was examined in a fixed bed tubular reactor.　Under the working conditions (
　　Reynolds number >1, catalyst particle diameter <1.6
　　mm) the reaction velocities of this system are not affected by the
　　external mass transference or by diffusion inside the catalyst.　The
　　kinetics of the conversion of I to II and water and of I to MeCHO and III
　　indicate that the controlling step is the surface velocity, with a
　　one-center mechanism; I is strongly adsorbed on the surface of the
　　catalyst.

L1　ANSWER 3 OF 11　CAPLUS　COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:　　　　　1976:65678　CAPLUS
DOCUMENT NUMBER:　　　　　84:65678
TITLE:　　　　　　　　　　Mass transfer effects for uniform and nonuniform
　　　　　　　　　　　　　catalyst pellets
AUTHOR(S):　　　　　　　　Patel, Kishor; Smith, J. M.
CORPORATE SOURCE:　　　　　Univ. California, Davis, CA, USA
SOURCE:　　　　　　　　　　Journal of Catalysis (1975), 40(3), 383-90
　　　　　　　　　　　　　CODEN: JCTLA5; ISSN: 0021-9517
DOCUMENT TYPE:　　　　　　Journal
LANGUAGE:　　　　　　　　　English

AB　Reaction rates for the catalytic oxidation of H in a spherical,
　　single-pellet, recycle reactor system showed negligible external mass
　　transfer resistances at Reynolds nos. as low as 0.27.　Only at lower flow
　　rates, where complete mixing of gas in the reactor space was doubtful, did
　　fluid-to-pellet mass transfer affect the rate in this particular reactor
　　arrangement.　Pellets prepared with a nonuniform distribution of active
　　catalyst particles, and an accompanying 2/3 reduction in
　　mass transfer surface, also exhibited no external diffusion resistance in

the temperature range 94-180°, unless the Reynolds number was
<0.27. However, at lower Reynolds nos. the retardation of the rate by
mass transfer was greater for the nonuniform pellets.

L1   ANSWER 4 OF 11   CAPLUS   COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1973:18260   CAPLUS
DOCUMENT NUMBER: 78:18260
TITLE: Axial dispersion in beds of small particles
AUTHOR(S):   Suzuki, Motoyuki; Smith, J. M.
CORPORATE SOURCE: Univ. California, Davis, CA, USA
SOURCE: Chemical Engineering Journal (Amsterdam, Netherlands)
                        (1972), 3(3), 256-64
                        CODEN: CMEJAJ; ISSN: 1385-8947
DOCUMENT TYPE: Journal
LANGUAGE: English
AB   Chromatog. was used to evaluate axial dispersion coeffs. EA in beds of
      porous catalyst particles and nonporous glass beads
      (0.1-1 mm) at modified Reynolds nos. 0.00237-11.9. He in H and
      O in N were used to give different mol. diffusivities. At low velocities,
      EA was proportional to the mol. diffusivity and the diffusibility η;
      the latter can be approx. predicted by the Burger equation in terms of
      void fraction and particle shape. The high values of EA for porous
      particles can be explained by inclusion of intraparticle diffusion, this
      being .apprx.10% of the gas-phase contribution. At high velocities, this
      contribution was negligible. At high velocities, Peclet nos. approached
      constant values which were proportional to the particle diameter

L1   ANSWER 5 OF 11   CAPLUS   COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1972:5241   CAPLUS
DOCUMENT NUMBER: 76:5241
TITLE: Dispersion and diffusion in beds of porous particles
AUTHOR(S):   Gunn, D. J.; England, R.
CORPORATE SOURCE: Univ. Coll., Swansea, UK
SOURCE: Chemical Engineering Science (1971), 26(9), 1413-23
                        CODEN: CESCAC; ISSN: 0009-2509
DOCUMENT TYPE: Journal
LANGUAGE: English
AB   The frequency response of a number of beds packed with porous catalyst
      spheres was measured. The expts. were carried out within the range of
      Reynolds number 1-200. By anal. of the responses, coeffs. of intraparticle
      diffusivity and the coeffs. of axial dispersion were obtained with good
      accuracy. The accuracy of the diffusivity coeffs. appeared to be
      .apprx.10%. The dependence of the axial dispersion coefficient upon
      Reynolds number agreed with the form of a recently published theory,
      and a significant difference in the packing characteristics of different
      grades of catalyst particles was found. A statistical
      anal. showed that the exptl. frequency response of the bed agreed with the
      differential equation and the solns. used in the theoretical anal. Radial
      dispersion characteristics were measured by injection of a tracer into
      fluid flowing through the packed bed. The measurements were in good
      agreement with a recent theory.

L1   ANSWER 6 OF 11   CAPLUS   COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1971:77790   CAPLUS
DOCUMENT NUMBER: 74:77790
TITLE: Longitudinal mixing of a liquid in a rising gas-liquid
                        flow in reactors with a fixed catalytic bed
AUTHOR(S):   Bezdenezhnykh, A. A.; Taranov, V. I.; Orlov, A. P.
CORPORATE SOURCE: Gos. Inst. Prikl. Khim., Leningrad, USSR
SOURCE: Teoreticheskie Osnovy Khimicheskoi Tekhnologii (1971),
                        5(1), 163-7
                        CODEN: TOKTA8; ISSN: 0040-3571
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB   Axial mixing of a liquid moving along the catalyst bed in a reactor
      cocurrently with a gaseous stream was studied by a tracer impulse
      technique. The exptl. data were successfully expressed by the equation Pe
      = 0.11 ReL0.45ReG0.47 (dr/dp)-0.31, where Pe = liquid Peclet number, ReL, ReG =
      Reynolds nos. for the liquid and gaseous phases, resp., dl, dp =
      reactor and catalyst particle diameter, resp.

L1   ANSWER 7 OF 11   CAPLUS COPYRIGHT 2006 ACS on STN
AB   Equilibrium concns. of m-, p-, and o-xylene (I, II, and III) and of
      PhMe and 1,2,4-C6H3Me3 (IV) disproportionation products from isomerization
      of each isomer on an aluminosilicate catalyst at 380, 400, 420, and
      440° were determined Pressures of 0.6-2.0 atm were optimal when the
      contact time was adjusted to the pressure chosen. When the
      catalyst particle size was 3.3 mm, resistance to
      external diffusion was not observed at Reynolds number >2, and when
      it was .apprx.0.6 mm the process was kinetically controlled. Selectivity
      in isomerizing I at an input rate of 1.0 hr-1 at 420° was raised
      from 71.4 to 85.4% by adding 9% IV to it. First-order rate consts. determined
      at 380, 400, and 420° yielded activation energies of 15.5, 17.0,
      and 18.0 kcal/mole for I isomerization to II, III, and II + III, 21.2,
      21.7, and 21.5 kcal/mole for II isomerization to I, III, and I + III, and
      15.0, 17.0, and 16.0 kcal/mole for III isomerization to I, II, and I + II.
      Isomerization was not depressed by addition of II, III, or PhEt, but the
      latter, diluting the product, reduced II crystallization yields and catalytic
      activity unless its concentration was <10% and the temperature was gradually
raised to
      480°. In isomerizing com. xylene, concns. of 80.6% II and 72.8%
      III could be arranged by adjusting the ratios of fresh to recycled C8 and
      C9 hydrocarbons to 1:7.45 and 1:0.42 and 1:6.06 and 1:0.494, resp. At a
      1:3.24 C8 recycle ratio and 400-20°, the product contained 50.0%
      III and 41.1% II.

L1   ANSWER 8 OF 11   CAPLUS COPYRIGHT 2006 ACS on STN
AB   The dynamic behavior of a fixed-bed catalytic reactor was studied under
      isothermal conditions by means of frequency response analysis. The
      investigation was conducted over a range of nonreacting and reacting
      conditions by using the H-O combination over supported Pt as the reaction
      system. The kinetics of the surface catalysis of this reaction were
      investigated sep. and then were incorporated into the analysis of
      frequency response data under reaction conditions. A method was developed
      whereby nonlinear chemical reaction effects appearing in the frequency
      response measurements can be separated from hydrodynamic factors for a plug
      flow reactor. Use is made of the describing function technique, often

used to approx. nonlinear servomechanism response, to accomplish this. By
this method, Peclet nos. measured for the reacting system agree with those
measured for the reacting system agree with those measured in the absence
of reaction. Based on the semitheoretical value of 2 for the Peclet group
at high Reynolds nos., a value of 0.73 cm.2/min. was determined for
the effective diffusion coefficient of H at 100° within the porous
catalyst particles. Analysis of frequency response data
in which this diffusion is not accounted for leads to Peclet nos. which
are unreasonable in view of previously reported results.

L1   ANSWER 9 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1966:469157 CAPLUS
DOCUMENT NUMBER: 65:69157
ORIGINAL REFERENCE NO.: 65:12895d-f
TITLE: Lack of dependence of conversion on flow rate in
                         catalytic studies
AUTHOR(S):   Chambers, Robert P.; Boudart, Michel
CORPORATE SOURCE: Univ. of California, Berkeley
SOURCE: Journal of Catalysis (1966), 6(1), 141-5
                         CODEN: JCTLA5; ISSN: 0021-9517
DOCUMENT TYPE: Journal
LANGUAGE: English
AB   The influence of temperature and concentration gradients on the reaction rate
over
      solid catalysts is determined by finding the effect of flow rate on conversion
      at constant contact time. This diagnostic test may fail because of lack of
      sensitivity under laboratory conditions. Small values for both d (size of
      catalyst particle) and v(linear flow velocity) give
      smaller Reynolds nos. than in large scale operations. Due to
      the small Re values, (1) the influence of heat and mass transfer may be
      very great, and (2) the dependence of the coeffs. of heat and mass
      transfer on flow rate may be so weak that a test of conversion vs. flow
      rate is quite insensitive. At an Re value of 10 the conversion doesn't
      appreciably change with flow rate at constant space velocity, even though
      the influence of heat or mass transfer on the reaction rate may be very
      severe.

L1   ANSWER 10 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1964:479867 CAPLUS
DOCUMENT NUMBER: 61:79867
ORIGINAL REFERENCE NO.: 61:13923c-d
TITLE: Ion exchange resin catalysis of sucrose inversion in
                         fixed beds
AUTHOR(S):   Reed, Eldon W.; Dranoff, Joshua S.
CORPORATE SOURCE: Columbia Univ.
SOURCE: Industrial & Engineering Chemistry Fundamentals
                         (1964), 3(4), 304-7
                         CODEN: IECFA7; ISSN: 0196-4313
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB   The kinetics of continuous sucrose inversion catalyzed by fixed beds of
      acid from ion exchange resin was studied. A reactor 1 in. in diameter was
      used and solution flow rate and catalyst particle size
      were varied to cover a modified Reynolds number range of 0.014 to
      4.8. Reaction temperature was varied from 50 to 75°. The reaction was
      clearly 1st-order over this range and showed an activation energy of
      15,950 cal./gram mole. The observed rate of reaction is strongly
      influenced by diffusion within the resin particles, and the external
      (film) mass transfer is not significant for the range of conditions
      explored.

L1   ANSWER 11 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1947:12627 CAPLUS
DOCUMENT NUMBER: 41:12627

ORIGINAL REFERENCE NO.:   41:2567d-f
TITLE: Catalytic conversion of hydrocarbon oils
INVENTOR(S):   Eastman, du Bois; Richker, Charles
PATENT ASSIGNEE(S):   The Texas Co.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2414256		19470114	US 1945-574389	19450124

AB   A catalytic cracking process is described in which a "modified" Reynolds
     number is one controlling factor. Operation is limited to the use of a
     charge stock having C residue of less than 0.2% and a color less than 200
     on the Lovibond 1/2-in. scale and a catalyst consisting of Al2O3 about 20,
     SiO2 70, and ZrO2 5%, the operating conditions being about 750°F.
     and a pressure of about 100 lb. per sq. in. The "modified" Reynolds number
     requirement is from 100 to 1000. This number, $R = D_pUP/Z$, in which R is the
     modified Reynolds number; D_p is the diameter of the catalyst
     particles in ft.; U is the average velocity in ft. per sec. of fluid
     mixture flowing through the reaction chamber, the reaction chamber being
     regarded as empty; P is the average d. in lb. per cu. ft. of fluid mixture
     flowing through the reaction chamber under the operating conditions of
     temperature and pressure; and Z is the viscosity of the fluid mixture flowing
     through the reaction chamber in lb. per ft. per sec. under the operating
     conditions of temperature and pressure.

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                      INPADOC
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